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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/849,920	05/04/2001	William J. Dally	2789.1001-001	1489

21005 7590 11/20/2002

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EXAMINER

COX, CASSANDRA F

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 11/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/849,920

Applicant(s)

DALLY ET AL.

Examiner

Cassandra Cox

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-7,10-14,17 and 18 is/are rejected.
- 7) ☐ Claim(s) 3-4,8-9, 15-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's arguments with respect to claims 1-2, 5-6, 8, and 10-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 1, 5-6, and 10-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Aoki (U.S. Patent No. 6,087,864).

In reference to claim 1, Aoki discloses a circuit in Figure 1 that comprises a frequency generating circuit (30) which generates an output signal at a rate that is a multiple of input frequency; a phase comparator (2) which directly compares the phase of an edge of the input signal (1) with the phase of an edge of the output signal (output from generator 30) and controls the frequency generating circuit (30) based on the comparison. The same applies to claim 6. The same also applies to claims 11 and 12,

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wherein the combinational circuitry is seen as the circuitry included in the phase detector (2), which is not shown, but is considered to be inherent.

In reference to claim 5, Aoki also discloses in Figure 1, that the frequency generating circuit (30) is a voltage-controlled oscillator (ring counters are well known to be used as voltage controlled oscillators of which fact official notice is taken). The same applies to claim 10.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 8 and 13-14, 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (U.S. Patent No. 6,087,864).

In reference to claim 2, Aoki discloses all the limitations of the claim as mentioned above with respect to claim 6, except the limitation that the phase comparator also receives a window signal that is true during edges of the input signal and output signal to be compared. However, this is considered to be an obvious design expedient dependent on the particular environment. It would have been obvious to one skilled in the art at the time of the invention that a window signal could be applied to the phase comparator for the advantage of controlling the timing of the operations of the phase comparator. The same applies to claim 8.

In reference to claim 13, Aoki discloses all the limitations of the claim as mentioned above with respect to claim 6, except the limitation that the input signal and the output signal are applied to gates of transistors. However, this is considered to be an obvious design expedient dependent on the particular environment. It would have been obvious to one skilled in the art that there are many phase comparators having combinational circuitry with transistors whose gates receive the input and output signals, of which fact official notice is taken, could be used in place of the phase comparator of Aoki. The same applies to claims 14 and 17-18, which is seen to be an inherent function of phase comparators.

Allowable Subject Matter

6. Claims 3-4 and 8-9, 14-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: Claims 3-4 and 8-9 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 14 wherein the window signal (window) is generated by a divider (193) in combination with the rest of the limitations of the base claims and any intervening claims. Claim 15 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 1 in which the output of the combinational circuitry depends only on the state of the input in combination with the rest of the limitations of the base claims and any intervening claims. Claim 16 would be allowable because the closest prior art of record fails to disclose a circuit as shown in

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Figure 6 wherein each of the up and down pulses (up, down) has a duration which is a fraction of the input signal and the output signal transition times in combination with the rest of the limitations of the base claims and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cassandra Cox whose telephone number is 703-306-5735. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 4:30 PM and on alternate Fridays from 7:30 AM to 4:00 PM.

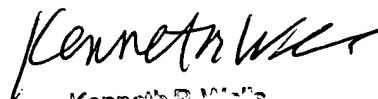
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on (703)-308-4876. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

CC



November 18, 2002



Kenneth B. Wells
Primary Examiner